

Microbial community analysis of Biological Oxygen-dosed Activated Carbon filters capable of long-term organic micropollutants removal and biofouling prevention

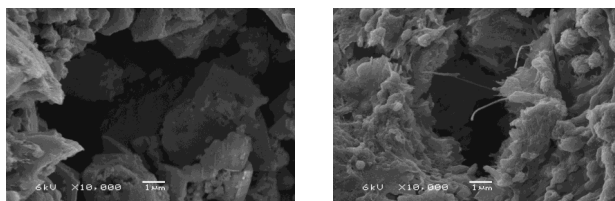
Estimated starting date : September 2022
Duration : 6— 12 months

Motivation

In recent years, the presence of organic micropollutants (OMPs) in water cycle has become a global concern due to their potential negative impact on human health & the environment.

Biological oxygen-dosed activated carbon filters are capable of removing OMPs & biofouling precursors even though they have been used for more than 12 years without regeneration.

The excellent long-term performance of BODAC filters at removing OMPs & biofouling precursors are likely connected to the microbial activity of the biofilms. In this project, microbial community of the pilot scale BODAC filters and Mn-enriched biofilms will be investigated.



(a)

(b)

Figure 1 Activated carbon pores (a) clean without biofilm, (b) with biofilm

Your responsibilities



Chemical analysis of the influent and effluent of pilot BODAC filters & Mn-enriched cultures



Optimization of DNA & RNA extraction from Mn-enriched cultures



qPCR of genes of interest
Phylogenetic analysis with NGS



Data analysis and reporting

Your benefit

- Allowance 200 EUR per month
- Experience to work in an international environment
- Experience to work in a multidisciplinary project
- Contribution to the advancement of water technology

Your profile

- Dutch / EU students / non-EU students studying in a Dutch university
- Strong background in (Bio)chemistry and Molecular Biology
- Experience in DNA and RNA extraction and purification + qPCR is preferred
- Preferably have a valid driver's license in the Netherlands
- Responsible, accuracy and precision-oriented
- Willing to be actively involved in the project
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How to apply



Send your CV (max. 2 pages) and motivation letter (max. 1 page) to:

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